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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
PHAN, TRI H	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 04/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/608,747	VIJEH ET AL.	
	Examiner	Art Unit	
	Tri H. Phan	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 December 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on December 3rd, 2004. Claims 1-30 are now pending in the application.

Drawings

2. The drawing in Figures 5 is objected to because all blocks should be labeled with descriptive legends based on 37 C.F.R. § 1.84(o) for supporting the objection in the Rules and M.P.E.P. (For example, substitute "531" to "buffer", "544" to "controller", "535" to "flow", etc.). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-6, 10-16 and 18-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** (U.S.6,233,074) in view of **Chin et al.** (U.S.6,314,110).

- In regard to claims 1 and 18, **Lahat** discloses in Figs. 5-8 and in the respective portions of the specification about the fibre optical ring network ("*fiber optical loop*"; For example see Fig. 5; col. 8, lines 21-43), where the connections between switches ("*metropolitan packet switches*"; For example see Figs. 5, 7-8) with different protocols such as Ethernet, ATM, FDDI, etc. ("*asynchronous data packets*"; wherein "*data flows in the single direction through the fiber optical loop*" as disclosed in Fig. 5), are established via the optical add drop module 'OADM' interface at the switches as disclosed in Fig. 8; col. 11, line 65 through col. 12, line 37; where the control of the bandwidth from overload disclosed in Col. 2, Lines 49-61, for maintaining the bandwidth for each flow ("*provided with the minimum bandwidth uni-directional QoS flow*"; For example see col. 8, lines 55-61); wherein the data signal is converted into different wavelengths via the protocol conversion, adds ("*inserting data onto the fiber optical loop*") and drops ("*pulling data off the fiber optical loop*") data signal at the optical signal input and output ("*I/O port, first and second ports*") controlled by the controller ("*processor*") for each user with different channels or wavelengths ("*separately regulating transmitted data over the fiber optic loop*"; For example see col. 11, lines 30-47) in order to control the demand of the bandwidth (For example see Figs. 6-8; col. 9, line 33 through col. 11, line 19); where the control of the bandwidth from overload disclosed in col. 2, lines 6-23 is just a consequence of the "*guaranteed quality of service*" for ATM traffic. **Lahat** fails to specifically disclose about the "*quality of service*". However, such implementation is known in the art.

Chin discloses in Figs. 1-5 and in the respective portions of the specification about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network

with spatial and local reuse method (For example see col. 5, lines 40-47; col. 7, lines 31-45; wherein each directional ring can be considered as a "*single direction*" as disclosed in Fig. 1; Abstract); wherein each node in the ring checks and regulates the amount of its own traffic according to its allocated usage ("*separately regulating transmitted data over the fiber optic loop*"; For example see col. 3, line 55 through col. 4, line 9; Fig. 4; col. 10, line 55 through col. 11, line 16) with the packet's priority ("*quality of service is maintained by ensuring that the data rate of the uni-directional QoS flow is left intact*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme, which 'requires certain amount of consistently available bandwidth for high priority traffic' as disclosed in col. 2, lines 54-62).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation scheme with guaranteed quality of service in **Lahat**'s bandwidth control system, with the motivation being to improve the ability to transfer data with the fair allocated bandwidth as disclose in **Chin**: col. 3, line 55-67, while keeping consistently available bandwidth for high priority traffic as disclose in **Chin**: col. 2, line 54-62.

- Regarding claims 2, 4, 10, 12, 15-16, 19, 22, 26 and 30, **Lahat** further discloses that the bandwidth is provided for a plurality of optical channels with different wavelengths ("*available bandwidth is allocated amongst a plurality of flows*"; For example see Col. 8, Lines 55-61); wherein the additional wavelengths are added for users demands ("*allocated bandwidth on a per-flow basis*"; For example see Col. 11, Lines 38-47). **Lahat** does discloses that the data rates in the Ethernet network are in the range from OC-3 to OC 12 on the optical fiber, but fails to

specifically disclose about the "*10 gigabit Ethernet*". However, Ethernet 802.3 or OC-192 is well known in the art for transferring data at the rate of "*10 gigabit Ethernet*".

Therefore, it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the Ethernet 802.3 or OC-192 for transferring data at the rate of "*10 gigabit Ethernet*" in the **Lahat**'s system.

- In regard to claim 3, 13, 20-21 and 28-29, **Lahat** does disclose about the bandwidth control via the method of adding/dropping data signal for unicast and multicast connections ("set of subscribers"; For example see Col. 6, Line 45 through Col. 7, Line 8), but fails to disclose about the method for decreasing "*data rate due to the congestion*". However, such implementation is known in the art.

For example, **Chin** further discloses that each node in the ring checks and regulates the amount of its own traffic according to its allocated usage with the packet's priority ("*maintain the subscriber's minimum assigned bandwidth*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme disclosed in Col. 2, Lines 54-67; , which 'requires certain amount of consistently available bandwidth for high priority traffic', e.g. "*maintain quality of service*", as disclosed in col. 2, lines 54-62); wherein, due to the congestion, decreasing the allocated bandwidth, i.e. "*data rate*", toward the minimum available bandwidth at the node through the use of management scheme ("*decreasing or adjusting data rate to the minimum bandwidth due to the congestion*"; For example see Col. 3, Lines 14-54; Col. 5, Lines 40-47).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation management scheme with decreasing bandwidth in **Lahat**'s bandwidth control system with the motivation being to improve the ability to transfer data with the guaranteed quality of service.

- Regarding claims 5-6, 14, 23-24 and 27, **Lahat** further fails to disclose about "*the allocated bandwidth according to the pre-determined weighting scheme*" in the fibre optical ring network ("*fiber optical loop*"). However, such implementation is known in the art.

For example, **Chin** further discloses about the bandwidth allocation scheme for different priority traffic ("*the allocated bandwidth according to the pre-determined weighting scheme*"; For example see Col. 2, Lines 54-67) through the use of management scheme ("*ring management system*"; For example see Col. 3, Line 14-34).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation management scheme in **Lahat**'s bandwidth control system with the motivation being to improve the ability to transfer data with the guaranteed quality of service.

- In regard to claims 11 and 25, **Lahat** discloses in Figs. 5-8 and in the respective portions of the specification about the fibre optical ring network ("*metropolitan area packet ring*"; For example see Fig. 5; Col. 8, Lines 21-43), which connects between switches ("*switching devices*") and edge devices ("*plurality of devices*") with different protocols such as

Ethernet, ATM, FDDI, etc. ("*asynchronous data packets*"; wherein "*data flows in the single direction through the fiber optical loop*" as disclosed in Fig. 5), are established via the optical add drop module 'OADM' interface at the switches in order to control the demand of the bandwidth by add/drop wavelengths as disclosed in Fig. 8; Col. 11, Line 65 through Col. 12, Line 37; where the control of the bandwidth from overload disclosed in Col. 2, Lines 49-61, for maintaining the bandwidth for each flow ("*provided with the minimum bandwidth uni-directional QoS flow*"; For example see col. 8, lines 55-61). **Lahat** fails to explicitly disclose about the "*quality of service*" where the "*minimum bandwidth is provided due to the congestion*"; however, such implementation is known in the art.

Chin discloses in Figs. 1-5 and in the respective portions of the specification about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network with spatial and local reuse method (For example see Col. 5, Lines 40-47; Col. 7, Lines 31-45); wherein each node in the ring checks and regulates the amount of its own traffic according to its allocated usage ("*assigning and controlling transmitted data over the fiber optic loop*"; For example see Fig. 4; Col. 10, Line 55 through Col. 11, Line 16) with the packet's priority ("*quality of service is provided*"; wherein the high and low priority traffic are provided with the bandwidth allocation scheme, which 'requires certain amount of consistently available bandwidth for high priority traffic' as disclosed in col. 2, lines 54-62); wherein, due to the congestion, decreasing the allocated bandwidth toward the minimum available bandwidth at the node through the use of management scheme ("*providing the minimum bandwidth due to the congestion*"; For example see Col. 3, Lines 14-54).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to combine the invention as taught by **Chin**, by implementing the bandwidth allocation scheme with guaranteed quality of service in **Lahat**'s bandwidth control system, with the motivation being to improve the ability to transfer data with the fair allocated bandwidth as disclose in **Chin**: col. 3, line 55-67, while keeping consistently available bandwidth for high priority traffic as disclose in **Chin**: col. 2, line 54-62.

5. Claims 7-9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Lahat et al.** (U.S.6,233,074) in view of **Chin et al.** (U.S.6,314,110) as applied to part 7 of this Office action above, and further in view of **Graves et al.** (U.S.6,229,788).

- In regard to claims 7-9 and 17, the combination of **Lahat** and **Chin**'s system discloses all the subject matter of the claimed invention as discussed in part 7 above of this Office action, including the method for allocating bandwidth to nodes in the ring network, i.e. Ethernet network, with the bandwidth allocation scheme for different priority traffic for data, voice or video (For example see **Chin**: Col. 2, Lines 54-67) through the use of management scheme with minimum bandwidth and delay via the use of spatial and local reuse method (For example see **Chin**: Col. 3, Line 14 through Col. 4, Line 9); but fails to specifically disclose about the rate shaping for the "*constant and variable bit rate*" in the QoS. However, such implementation is known in the art.

For example, **Graves** discloses in Figs. 3-4 and in the respective portions of the specification about the system and method for traffic shaping in the broadband fiber-based

access system; wherein the constant bit rate 'CBR' ("*constant bit rate*"; For example see Col. 1, Lines 26-65) and unspecified bit rate 'UBR' ("*variable bit rate*"; For example see Col. 1, Lines 26-65) are controlled by the traffic shappers disclosed in Col. 12, Line 5 through Col. 11, Line 11 ("*rate shaping*"; For example see Col. 10, Lines 24-29).

Thus it would have been obvious to the person of ordinary skill in the art at the time of the invention was made to use the invention as taught by **Graves,** which implements the traffic shapper in the management scheme of **Lahat** and **Chin**'s system, with the motivation being to control the flow of different classes of traffic such as BC, CBR, UBR, in the broadband fiber-based access system.

Response to Arguments

6. Applicant's arguments filed on February 5th, 2004 have been fully considered but they are not persuasive.

Applicant argues that the combination of **Lahat** and **Chin** does not disclose the "*QoS is maintained by ensuring that the data rate of a uni-directional QoS flow is left intact*". Examiner respectfully disagrees. **Lahat** discloses about the fibre optical ring network, where the connections between switches with different protocols such as Ethernet, ATM, FDDI, etc. flow in a single direction, e.g. "*data flows in the single direction through the fiber optical loop*", as disclosed in Fig. 5 or **Chin** discloses about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network with spatial and local reuse method; wherein each directional ring can be considered as a "*single direction*" as disclosed in Fig. 1; and

wherein each node in the ring checks and regulates the amount of its own traffic according to its allocated usage with the packet's priority, wherein the high priority traffic requires certain amount of consistently available bandwidth as disclosed in **Chin**: col. 2, lines 54-62, e.g. "*quality of service is maintained by ensuring that the data rate of the uni-directional QoS flow is left intact*", through the use of the fair allocated bandwidth for distribution as disclosed in **Chin**: col. 3, line 55-67. Therefore, Examiner concludes that the combination of **Lahat** and **Chin** teaches the arguable features.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, **Chin** discloses about the system and method for distributing a fair allocated bandwidth for the bi-directional ring network, which provide consistently available bandwidth for the high priority traffic, for modifying the **Lahat**'s missing teach about QoS. Therefore, Examiner concludes that the combination of **Lahat** and **Chin** is proper.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so

long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Claims 2-10, 12-17, 19-24, and 25-30 are rejected as in Parts 4 and 5 above of this Office action and by virtue of their dependence from claim 1.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Francois et al. (U.S.5,479,404), **Weberhofer, Daniel** (U.S.6,014,384), **Hashimoto, Noriaki** (U.S.2004/0190455), **Lee et al.** (Point to Point Label Switching Protocol for Optical Access Network, IEE Catalogue No. 01CH37239, 0-7803-7101, January 2001, pages 257-260) and **Resilient Packet Ring Alliance** (An Introduction to Resilient Packet Ring Technology, A White Paper by the Resilient Packet Ring Alliance, October 2001, pages 1-16) are all cited to show devices and methods for improving the control bandwidth in the telecommunication architectures, which are considered pertinent to the claimed invention.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau T. Nguyen can be reached on (571) 272-3126.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (703) 305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BRIAN NGUYEN
PRIMARY EXAMINER

Tri H. Phan
April 6, 2005